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To Study the Histopathological Forms of Thyroid Lesions Observed in Tertiary Care Hospital

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ABSTRACT

Introduction: The thyroid organ is a butterfly-model organ made out of globular right and left flaps associated in the midline by a meagre organisation named isthmus. Disorder related to thyroid consists of a group of disease of endocrines. All of these disorders may be associated with clinical conditions of hyper as well as hypo thyroids. Surgical excision and pathological evaluation are vital to establish a proper diagnosis.

Aim: The study to show the histopathological forms of thyroid lesions observed in a tertiary care hospital.

Materials and Methods: The present cross-sectional study was conducted for 2 years. Inclusion criteria: The test population included patients with thyroid pathology in a specified period. Thyroidectomy specimens including lobectomy, partial thyroidectomy, subtotal thyroidectomy and total thyroidectomy. Exclusion criteria: Patients with other disorder than thyroid were excluded.

Results: The total number of studied cases was 225 cases (table 1). The reviewed cases were classically categorized into two main groups; Non- neoplastic (132; 58.5%) and Neoplastic (93; 41.5%). Papillary carcinoma was the most frequent thyroid cancer accounting for most of the thyroid cancers.

Conclusion: Thus, in conclusion, females accounted for a higher number of patients with neoplastic thyroid lesions and the prevalence peaked at a younger age. Present study finding suggests that papillary carcinoma appears much before development so diagnosis should be fastened.

Key Words: Histopathological, Thyroid, Papillary carcinoma, Neoplastic thyroid lesions

INTRODUCTION

The thyroid organ is a butterfly-model organ made out of globular right and left flaps associated in the midline by a meagre organisation named isthmus.^{1,2} Disorder related to thyroid consists of a group of commonly come across the disease of endocrines.³⁻⁵ The thyroid gland is a primary endocrine organ to form during foetal growth. Its development starts at four weeks of conception, it develops at around a month of conception starting from foregut endoderm near the baseline of the tongue, it extends gradually at the fifth month when the foetus develops.⁶ Thyroid partakes widespread lymphatic drainage comprising numerous points of lymph nodes, which are not inadequate to the pre-laryngeal (or Delphian), pre- and paratracheal, retropharyngeal, retroesophageal, and internal jugular lymph nodes. The process becomes very important in the classification and staging of thyroid carcinoma. At that time careful lymph node and the dissec-

tion of it may be necessary for the examination for metastases.^{4,7} The occurrence of goitre in regions of unembellished iodine deficiency can be as in elevation as 80%. Inhabitants at specific threat tend to be out-of-the-way and live in hilly areas in South-East of Asia, Latin America and in Central of Africa.^{4,8} Between 2006-2008 and 2012-2014, the ASRs for Thyroid cancer in India increased from 2.5 to 3.5/100,000 women (+37%) and from 1.0 to 1.3/100,000 men (+27%).⁹ Thyroid disorders are four times more in females than in males.^{10,11} The endocrine systems glands may exaggerate by a diversity of illnesses and sickness which ranges from useful, functional and immunological intermediated which leads to growth and formation to neoplastic lesions.¹²

The greater part of thyroid lesions consists of non-neoplastic lesions and 5% of the thyroid lesions are neoplastic whereas remaining of the lesions are due to inflammatory or developmental reasons.¹³ Multinodular goitre is the communal

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source of enlargement of thyroid followed by thyroid tumours.^{5,14} Maximum cases of the tumours are benign, though can put malignancy.¹⁵ cancer of the thyroid is a relatively uncommon malignancy which represents around 1.5% of total cancers cases, on the other side it is a most common type of cancer-related to endocrine which accounts around 92% of all disorder and malignancy involved with the endocrine system. thyroid malignancy is characterised into various among them Papillary is most common after that follicular carcinoma, then medullary carcinoma, anaplastic carcinoma and lymphoma.¹⁶ Its rare but thyroid gland can also be a site for metastasis. All of these disorders may be associated with clinical conditions of hyper as well as hypo thyroids. To establish proper diagnosis surgical excision and pathological evaluation are vital.

AIM: The aim of the study was to show the histopathological forms of thyroid lesions observed in a tertiary care hospital.

MATERIALS AND METHODS

The present study was a cross-sectional study conducted in the Department of Pathology at People's College of Medical Sciences and Research Centre, Bhanpur, Bhopal

Inclusion criteria: The test population included patients with thyroid pathology in a specified period. Thyroidectomy

specimens including lobectomy, partial thyroidectomy, sub-total thyroidectomy and total thyroidectomy.

Exclusion criteria: Patients with other disorder than thyroid were excluded

Processing: Important medical data including of age, gender, clinical presentation and data of fine-needle aspiration cytology, ultrasonography as well as surgical findings were obtained from histopathology request form register. A letter of approval was obtained through the Institutional ethics committee. The sample was fixed in 10% formalin and processed. It was stained with haematoxylin and eosin. Special stains were also employed like Congo Red, Periodic Schiff and Reticulin were used as per requirement, following standard protocol

The specimens were fixed in 10% formalin and the tissues were processed and stained with haematoxylin and eosin. Special stains like Congo Red, Periodic Schiff and Reticulin were used whenever needed, following standard protocol.

RESULTS

The total number of studied cases was 225 cases (table 1). The reviewed cases were classically categorized into two main groups; Non- neoplastic (132; 58.5%) and Neoplastic (93; 41.5%).

Table 1: Classification of cases in percentage.

Category	Number	%	M/F	Category	Number	%	M/F
Non- Neoplastic	132	58.5	38/94	Neoplastic	93	41.5	20/73
Goiter	123	54.6	34/89	Adenoma*			
Hashimoto's	5	3.78	2/3	Follicular	3	1.33	0/3
Hyperplastic nodule	3	1.33	1/2	Hurthle cell	2	0.88	1/1
Graves' disease	1	0.44	1/0	Carcinoma*			
				Papillary	84	37.33	15/69
				Follicular	2	0.88	2/0
				Medullary	2	0.88	2/0

Table 1 depicts cases into neoplastic and non-neoplastic categories non-neoplastic was 58.5% while neoplastic was the rest of the 41%. Cases of goitre were more common in non-

neoplastic while in neoplastic papillary carcinoma cases was more common.

Table 2: Age-wise classification of non-neoplastic lesions:

Age	Goiter	Hashimoto's	Hyperplastic nodule	Graves' disease
<20	2	0	0	0
20-30	31	0	0	0
30-40	55	1	2	1
40-50	23	3	1	0
50-60	9	1	0	0
>60	3	0	0	0

Table 2 depicts cases of goitre was the more common in-between age group of 20-50.

Table 3: Age-wise classification of neoplastic lesions:

Age	Follicular adenoma	Hurthle cell adenoma	Papillary Carcinoma	Follicular carcinoma	Medullary carcinoma
<20	0	0	4	0	0
20-30	0	0	18	0	1
30-40	2	1	21	1	0
40-50	1	0	19	0	1
50-60	0	1	2	1	0
>60	0	0	1	0	0

Cases of papillary carcinoma are more overseen in all age group while 30-40 age groups are more in numbers.

DISCUSSION

Globally 7% of the population residing in the world is suffering from clinically apparent goitre. Iodine insufficiency in most developing countries has emerged as a cause of thyroid disorders. Enlargement of the thyroid may be in the form of multinodular, solitary or diffused goitre. And these thyroid disorders are more prominent in females as compared to males. Though the prevalence of thyroid disorders differs with gender, age, groups and racial differences.^{4,7,19}

Present study observation was showing the prevalence of thyroid lesions were more in the age group of the twenties, thirties plus forties age group. Female patients were 94 in number while males were 38 in number, which shows thyroid lesions are more predominant in females. 54.6 % (123) cases were observed of multinodular goiter cases, forming the most common pathologic lesion. The present finding is similar to a study conducted by Tsegaye et al. study and Kolar et al study.^{3,20} A study by Prabha et al. Ramesh et al and Shwetha et al. found the age incidence to be common in the 3rd–5th decade and Jagadale et al. observed generally 4th to 6th decades age group were suffering.^{11,21,22}

Hashimoto thyroiditis (HT) is an autoimmune inflammatory disease categorised by widespread lymphocyte infiltration, fibrosis, and parenchymal atrophy and oxyphilic changes. Hypertension affects approximately 5% of the people, is usually diagnosed in the 4th to 6th decade of life and is approximately 15 times more common in women. Historically, the presence of HT was thought to increase the risk of developing thyroid lymphoma.²³ Present study finding was similar to the above literature as the patients with Hashimoto's thyroiditis were common between 4th to 6th.

The epidemiology of follicular adenoma (FA) is tough to analyse for the reason that of the lack of reliable criteria for differentiating hyperplastic nodules and adenomas. Solitary thyroid nodules take place in 4-7% of adults in an iodine suf-

ficient area. In iodine undersupplied areas, the rate can rise to 50%. In the present study as well as internationally females are more commonly affected than males. Whereas, the risk of malignancy progression is greater in males as compared to female.

In the present study, malignant lesions predominated over benign adenomas within the neoplastic category. Present findings in this regard are similar to the study of Kader et al. who reported 81 neoplastic cases, among which 88.8% and Beigh et al. also had a similar finding. Papillary carcinoma was the most common malignant thyroid lesion and constituted 37.7 % of the malignant lesions in the present study. This observation was following the study of Chukudebelu et al., Abdulkader et al. and Gupta et al. and Beignet et al.²⁶⁻²⁸ In addition to being consistent with the hospital-based histopathological studies that papillary carcinoma is the commonest malignancy of thyroid and its frequency are increasing. Our findings also conform to the recent registry-based studies from Finland and Wales regarding the increasing trend of papillary carcinoma in Europe. Wang et al., in their study found incidental papillary carcinoma in 147 out of their 709 cases and concluded that these are more common in females.

CONCLUSION

The present study observed thyroid lesion was more common in female as males cases were only a few. Most of the cases affected with thyroid lesions were in between 30-40 years of old. MNG is a commonly occurring disease observed clinically radiologically and cytologically. Papillary carcinoma was common neoplastic disease followed by medullary carcinoma and anaplastic carcinoma, causing a smaller number of malignant lesions. Findings from fine needles aspiration and USG pushed the observation towards a moderate agreement with histopathological findings as far as it was concerned with papillary carcinoma. The present study highlights the necessity for time to time assessment of multinodular goitre in young and middle-aged female for initial detection. Thus, in conclusion, females accounted for a higher number of patients with neoplastic thyroid lesions and

the prevalence peaked at a younger age. Papillary carcinoma was the most frequent thyroid cancer accounting for most of the thyroid cancers. Present study finding suggests, there appears to be greater than before development of papillary carcinoma diagnosis so it should be fastened.

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